

Table 2. contains the mean monthly variation for the times of the day stated in Table 1, during the above-mentioned period of sixteen months.

Table 3. contains the mean monthly true variation, and mean monthly diurnal alteration of variation during the above period; and also the mean monthly true variation, and mean monthly diurnal alteration of variation, for many months in each year, from 1786 to 1805 inclusive.

Table 4. contains the differences for twelve years (viz. from 1793 to 1805) between the observations made at the times of the vernal and autumnal equinoxes, and summer and winter solstices. From a mean of these, the variation appears to increase, or go westward, from the winter solstice to the vernal equinox $0^{\circ}80'$; and diminishes, or goes eastward, from the vernal equinox to the summer solstice $1^{\circ}43'$; it increases again, from the summer solstice to the autumnal equinox $2^{\circ}43'$; and continues nearly the same, only decreasing $0^{\circ}14'$ from the said equinox to the winter solstice.

Table 5. contains the dip of the magnetic needle from the year 1786 to 1805. During the first sixteen months the dip was observed as frequently as the variation; but as there did not appear to be any diurnal alteration in the dip, it has been thought sufficient to insert the mean for each month. From a comparison of Mr. Gilpin's observations in 1805 with those made by Mr. Cavendish in the year 1775, it appears that its mean annual decrease has been $4''3$; and its progressive annual decrease, in the above period, has been, on a mean, $1^{\circ}4'$.

On the Declinations of some of the principal fixed Stars; with a Description of an Astronomical Circle, and some Remarks on the Construction of Circular Instruments. By John Pond, Esq. Communicated by Smithson Tennant, Esq. F.R.S. Read June 26, 1806. [Phil. Trans. 1806, p. 420.]

The observations here given were made at Westbury, in Somersetshire, in the years 1800 and 1801, with a circular instrument of $2\frac{1}{2}$ feet in diameter, constructed by Mr. Troughton. The stars selected by our author were, for a period of nearly two years, constantly observed on the meridian, when they passed at a convenient hour, generally reversing the instrument in azimuth at the end of every day's observation, and never making use of those observations that were not made in pairs.

Mr. Pond has subjoined to his observations a comparison with some procured for him by Mr. Troughton, in which he has included the latest observations made at Greenwich.

The deduced polar distances are also annexed to each observation.